CLAIMS

What is claimed is:

1. A method, comprising:

determining a power consumption level of a computer system;

cooling the computer system with a first cooling cycle if the power consumption level is greater than a predefined threshold; and

cooling the computer system with a second cooling cycle if the power consumption level of the computer system is less than the predefined threshold, wherein the first cooling cycle and the second cooling cycle operate in reverse directions of a cooling loop.

2. The method of claim 1, wherein changing a pump rotation direction switches the computer system from the first cooling cycle to the second cooling cycle.

3. The method of claim 2, wherein the pump requires less power to operate in the second cooling cycle.

4. The method of claim 2, wherein the pump transports a working fluid.

5. The method of claim 4, wherein the pump transports a working fluid comprising a liquid phase and a vapor phase in the first cooling cycle.

6. The method of claim 4, wherein the pump transports a working fluid comprising a liquid phase in the second cooling cycle.

7. The method of claim 1, wherein the computer system is a notebook computer.

8. The method of claim 1, wherein the computer system has a power consumption level greater than the predefined threshold when powered by an alternating current (AC) source.

9. The method of claim 1, wherein the computer system has a power consumption level less than the predefined threshold when powered by a battery.

10. A method, comprising:

cooling a computer system powered by an alternating current (AC) source with a refrigeration operation; and

switching to a two-phase operation to cool the computer system if the AC source is changed to a battery source.

11. The method of claim 10, wherein the refrigeration operation provides greater cooling than the two-phase operation.

12. The method of claim 10, wherein the two-phase operation requires less power to operate than the refrigeration operation.

13. A thermal management system of a notebook computer system, comprising:

a heat generating component;

an evaporator coupled to the component to remove heat from the component, wherein the heat is transported via a working fluid; and

a pump coupled to the evaporator to transport the working fluid from the evaporator to a heat exchanger, wherein the pump increases the temperature of the working fluid in a first operating mode, wherein the pump's direction of rotation is reversed in a second operating mode.

14. The thermal management system of claim 13, further comprising:

a fan coupled to the heat exchanger to reject heat from the working fluid to the ambient air.

15. The thermal management system of claim 14, wherein the working fluid comprises water.

16. The thermal management system of claim 14, wherein the working fluid changes phase inside the evaporator to become a mixture of water and vapor.

17. The thermal management system of claim 15, wherein the working fluid further comprises alcohol.

18. The thermal management system of claim 16, wherein the vapor condenses in the heat exchanger.

19. The thermal management system of claim 13, further comprising:

an expansion valve coupled to the heat exchanger to reduce the pressure of the working fluid in the first operating mode.

20. The thermal management system of claim 19, wherein the expansion valve allows the working fluid to pass from the evaporator to the heat exchanger in a second operating mode, wherein pressure of the working fluid at the evaporator is approximately equal to the working fluid at the heat exchanger.

21. The thermal management system of claim 13, wherein the pump is a gear pump.

22. The thermal management system of claim 13, wherein the pump is a vane pump.

23. The thermal management system of claim 13, wherein the pump is a regenerator pump.

24. The thermal management system of claim 13, wherein the thermal management system is set to the first operating mode if the notebook computer system is powered by an alternating current (AC) source.

25. The thermal management system of claim 13, wherein the thermal management system is set to the second operating mode if the notebook computer system is powered by a battery source.

26. The thermal management system of claim 13, wherein the thermal management system is set to the first operating mode if a component of the notebook computer system has a temperature greater than a predefined threshold.

27. The thermal management system of claim 13, wherein the thermal management system is set to the first operating mode if a predefined application is being executed on the notebook computer system.

28. The thermal management system of claim 13, wherein the component is a processor.

29. A thermal management system, comprising:

means for cooling a notebook computer system through a cooling loop having a first operation and a second operation; and

means for reversing the direction of a working fluid in a cooling loop to reduce power used to operate the thermal management system.

30. The thermal management system of claim 29, further comprising:

means for determining a power source of the notebook computer system.